

M.I.A.S. BULLETIN

A COMMUNICATION FROM THE MONROE INSTITUTE OF APPLIED SCIENC

#PR31380H

THE HEMI-SYNC PROCESS

Perhaps the most significant mind-brain research in recent years has been in the hemispheric specialization. The consensus of several hundred pages and studies generally supports the postulates of dominant left brain functions (linear, verbal, analytic) and those of the right brain (visual, spacial, synthesis). All concede the fact that our educational system and the fundamental values of our culture nurture heavily such left brain dominance.

Synchronous or simultaneous brain wave patterns in both hemispheres (HEMI-SYNC) apparently occurs infrequently in typical human consciousness and then for a few seconds at the most. Usually, activity shifts from left to right hemisphere as the dominant area almost in a flickering moment according to the mental task at the moment.

By definition, hemispheric synchronization or coherence is a state of consciousness indicated by EEG forms in both hemispheres which are simultaneously equal in amplitude and frequency. Due to the rare occurrence and short duration of such consciousness, there has been little supportive instrumental measurement until recently. The best early study was conducted by Elmer and Alyce Green at the Menninger Clinic, where a subject with twenty years in Zen meditative training was tested extensively. Results showed that the subject could establish at will a hemi-synchronous state, consistently and over fifteen minutes in length.

Through the use of audio stimulæ to evoke an electrical frequency following response in the brain (EFR), as developed by the Institute, and with the application of such signals in a beat-frequency mode (differential signals in each ear), research by the Institute has determined workable methods and techniques that induce hemispheric synchronization or coherence in the human brain. This has been verified and replicated consistently both at the Institute and other facilities.

Thus for the first time, consciousness as represented and/or created by the HEMI-SYNC state can be instigated, identified, and measured.

The full scope of HEMI-SYNC consciousness is yet to be determined. Very little is known of its characteristics, value or utility other than the preliminary work performed by the Institute. There is a growing belief that meditation, moments of crisis, certain mental disciplines, intense concentration, peak experiences, all represent varieties of such consciousness. Conversely, hypnosis, drug-induced states, illness, anaesthesia, and like conditions do not. Subsequent research may substantiate

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The knowing (conviction?) through experience that thinking, cognition self, personality, and any other components of consciousness are not dependent upon physical sensory signals was in itself a most profound learning process to most participating subjects.

In a social structure bound heavily to causal relationships through matter-time-space, the acceptance of such as valid through personal experience was indeed profound, disturbing, and extremely stimulating to both staff and participants. It was truly a suspected Pandora's Box that offered unexpected potentials in an aspect that had pre-occupied man since his early beginnings.

With the advent of a wide interest in brain-hemispheric theory and study, the Institute undertook to explore the bi-lateral effects of FFR. The natural outcome of this was to seek patterns which would "balance" or adjust the relationships between the left and right brain, and help produce desired changes in behavior. Utilizing the Institute FFR process in the binaural mode, a bi-lateral EEG on a volunteer subject was set up whereby the dominant wave form of each brain hemisphere was displayed on a dual-trace oscilloscope.

Binaural beat-frequency stimulation creates a sustaining FFR that is synchronous in both amplitude and frequency between the brain hemispheres.

The total meaning of such coherency is not understood as no extended studies have been made except those begun by the Institute. Prior to the development of the FFR method, no efficient technique was available to generate an hemi-sync state. It may be true that those in a focused relaxed state in prayer, meditation, or similar physically-quiet states may produce periods of such synchronization. Certainly, it must occur naturally if only momentarily under certain specific conditions in human life. Exactly what these are is not yet known.

There is a partial entrainment effect, and there are indications that it can be learned much as in the bio-feedback model. Whether the synthesized signal crosses the Corpus Callosum (the nerve network between the brain hemispheres), travels through the brain stem, limbic system - this has yet to be determined. It appears that new neural pathways are established as a result.

The efforts of the Institute have not been designed or performed with the intent of offering documentation to the scientific community of the world at large, although much of orthodox scientific method has been utilized. Instead, such can well be the goal of other organizations and individuals who may take the basic findings of the Institute to prove and present them in other forms, in other areas of specialization. The Institute welcomes this participation.

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ORIGINS: The Institute had its beginning in the Research and Development Division of Monroe Industries, Inc., which at the time (1958) was investigating methods and techniques of accelerated learning through practical environmental changes. As a result of certain findings, the decision was made to broaden the base of such investigations and to alter the purpose of any such research effort. In 1971, the Institute was created to conform with and expand this different approach.

PREMISE: Stated simply, the Institute holds to the concept that (1): Consciousness and the focusing thereof contain any and all solutions to the life processes that man desires or encounters. (2): Greater understanding and appreciation of such consciousness can be achieved only through inter-disciplinary approaches and co-ordination; (3): The results of related research effort are meaningful only if reduced to practical application, to "Something of Value" within the context of the contemporary culture or era.

SUMMARY: Early studies of consciousness and the decay thereof into sleep brought a major tool into use by the Institute.

It was discovered that phased sine waves at discernable sound frequencies when blended to create "beat" frequencies within the ranges of electrical brain waves found at the various stages of human sleep, will create a Frequency Following Response (FFR) within the EEG pattern of the individual listening to such audio waveforms. The FFR in turn evokes physiological and mental states in direct relationship to the original stimulus.

With the availability of this new tool, for the first time it became possible to develop and hold the subject into any of the various stages of sleep, from light alpha relaxation through theta into delta and in REM (dreaming). A generic patent on the method and technique was granted to the originator, Robert Monroe, for whom the Institute is named.

The Monroe method and techniques were found to be able to "program" sleep cycles throughout the night of sleep, if so desired. Variations could bring adjustment of the duration of each stage of sleep during the cycle, according to the needs and desires of the individual. The waking-from-sleep moment was enhanced greatly over the traditional alarm clock which had no cognizance of the stage of sleep it was invading. By programming the FFR up into REM sleep for the few minutes before wake-up time, then inserting a beta signal, the sleeper was roused gently yet firmly, without startling shock or dull sleep "hangover".

Another important milestone of Institute research into consciousness came with the development of a "mind awake - body asleep" state.

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The Institute has reached the following conclusions in relation to the propagation and delineation of HEMI-SYNC consciousness, based upon both anecdotal and bio-monitoring consensus from 4,823 experiments among 1,280 volunteer participants over a five year period.

- (1) The characteristics of such consciousness may be varied directly in accordance with the signal or signals introduced.
- (2) The re-introduction of such signal patterns evoke a replication of the original characteristics.
- (3) Specific states of HEMI-SYNC consciousness can be learned and re-established without the original stimulus much as the bio-feedback process.
- (4) HEMI-SYNC audio stimulus is not all-pervasive. It can be rejected easily either subjectively or objectively.
- (5) No significant or lasting contra-indicative effects have been reported among the participants in the experimental series.
- (6) Based upon the application of specific single and multiple audio patterns, the following characteristics of HEMI-SYNC consciousness have been noted
 - (A) Deep mental and physical relaxation.
 - (B) Sense of euphoria, extending beyond stimulus.
 - (C) Single-pointed focus of attention.
 - (D) Increased utilization of memory patterns, at all levels.
 - (E) Higher suggestibility, but with greater acceptance or rejection.
 - (F) Holistic problem solving and decision-making.
 - (G) Changes in overview, less restrictive, significantly broader in scope.
 - (H) Major increase in creativity, ideas, with attendant application.
 - (I) Measurable changes in muscular co-ordination.
 - (J) Permanent memory addition, by rote and self-synthesized experience.

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The Institute is continuing to operate experimental programs in the evaluation of effects produced by other audio patterns yet to be investigated. Formal papers of such effort will be presented to appropriate groups at a future date.